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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,961	12/27/2001	Young Hun Ha	8733.524.00	7359

30827 7590 05/08/2003

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EXAMINER

LANDAU, MATTHEW C

ART UNIT PAPER NUMBER

2815

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,961

Applicant(s)

HA ET AL.

Examiner

Matthew Landau

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 10-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 10-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 9.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the protective layer formed at each lower edge of the storage capacitor area (claim 3) and the pixel electrode extended into an upper edge and each side edge (claim 6) must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1, 5, 7-9, are objected to because of the following informalities:

In regards to claim 1, the limitation "protective layer pattern" is objected to. It is suggested the limitation be replaced with "protective layer [pattern]".

In regards to claims 5, 7, and 9, there is insufficient antecedent basis for "the same pattern". Further regarding claims 5 and 9, does the active layer have the same pattern as the protective layer and the ohmic contact layer?

In regards to claim 8, the first limitation should be replaced with "a gate electrode connected [corrected]..."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, and 3-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

~~In regards to~~ In regards to claim 1, the limitation "formed separately between..." renders the claim indefinite. It is unclear what is meant by this limitation. Note claim 3 has a similar problem.

Maunten In regards to claim 4 and 5, it is unclear is the semiconductor layer defined in claim 4 is the same as the semiconductor layer defined in claim 2. If it is the same, it is unclear how the

Art Unit: 2815

ohmic contact layer below the storage electrode can have the same pattern as the source and drain electrodes. It is also unclear if an active layer exists above the gate electrode. Note claims 8 and 9 have similar problems.

Further regarding claim 5, the limitation "having the same pattern" renders the claim indefinite. It is unclear how "having the same pattern" structurally defines the claimed invention. Note claims 7 and 9 have similar problems.

In regards to claim 6, the limitation "a pixel electrode extended into an upper edge" renders the claim indefinite. It is unclear how the pixel electrode extends into an edge. Does this mean the pixel electrode is extending inside of the storage electrode?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Han et al. (US Pat. 5,926,235, hereinafter Han).

In regards to claim 1, as best the examiner can ascertain the claimed invention, Figures 4 and 5I of Han disclose a liquid crystal display device including a data line 115 supplied with a data signal, a gate lines 117 supplied with a scanning signal, a pixel electrode 104 for driving a

Art Unit: 2815

liquid crystal cell, and a thin film transistor for responding to the scanning signal to switch the data signal into the pixel electrode, the device comprising: a storage electrode 130 overlapping with the gate line forming a storage capacitor; and a protective layer pattern 113a being formed separately between the storage electrode and the pixel electrode at an overlapping area between the storage electrode and the pixel electrode.

In regards to claim 2, Figure 5I of Han discloses a gate insulating film 109 on a substrate 110 in such a manner to cover the gate line; and a semiconductor layer 111/112 between the gate insulating film and the storage electrode.

In regards to claim 3, Figure 5I of Han discloses the protective layer 113a is separately formed at each lower edge of the storage capacitor area.

In regards to claim 4, Figures 4 and 5I of Han disclose a gate electrode 107 contacting the gate line 117 on the substrate 110; a gate insulating film 109 on the substrate; a semiconductor layer 111/112 on the gate insulating film; a source electrode 105 and a drain electrode 106 on the gate insulating film; and a protective layer 113a between the gate insulating film and the pixel electrode 104.

In regards to claim 5, as best the examiner can ascertain the claimed invention, Figure 5I of Han discloses the semiconductor layer 111/112 has an active layer 111 and an ohmic contact layer 112, and the active layer having the same pattern as the protective layer 113a and the ohmic contact layer having the same pattern as the source electrode 105 and the drain electrode 106.

Claims 6-9 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art.

In regards to claim 6, as best the examiner can ascertain the claimed invention, Figures 4 and 5 of the instant application disclose a liquid crystal display device including a data line 4 supplied with a data signal, a gate lines 2 supplied with a scanning signal, a pixel electrode 22 for driving a liquid crystal cell, and a thin film transistor T for responding to the scanning signal to switch the data signal into the pixel electrode, the device comprising: a storage electrode 30 overlapping with the gate line forming a storage capacitor; and a pixel electrode 22 extended into an upper edge and each side edge of the storage electrode.

In regards to claim 7, as best the examiner can ascertain the claimed invention, Figure 5 of the instant application discloses the gate line 2 on a substrate 1; a gate insulating film 12 on the substrate to cover the gate line; and a semiconductor layer 14/16 on the gate insulating film in the same pattern as the storage electrode 30.

In regards to claim 8, Figures 4 and 5 of the instant application disclose a gate electrode 6 connected with said gate line on said substrate 1; a gate insulating film 12 on said substrate; a semiconductor layer 14/16 on said gate insulating film; a source electrode and a drain electrode (8 and 10) on said gate insulating film; a protective layer 18 on said gate insulating film; and the pixel electrode 22 on said protective layer.

In regards to claim 9, as best the examiner can ascertain the claimed invention, Figure 5 of the instant application discloses the semiconductor layer 14/16 has an active layer 14 and an ohmic contact layer 16, the active layer having the same pattern as the protective layer and the ohmic contact layer having the same pattern as the source electrode 8 and the drain electrode 8.

In regards to claim 15, Figures 1 and 2 of the instant application discloses a liquid crystal display device, comprising: first 1 and second (not shown, page 3, lines 1-3) substrates; a gate line 2 and a data line 4 over the first substrate, the data line crossing the gate line to define a pixel region; a thin film transistor T having source and drain electrodes (8 and 10) at the crossing of the gate line and data line; a storage electrode 30 over the gate line; a pixel electrode 22 over the storage electrode; a patterned protective layer 18 on the storage electrode between the storage electrode and the pixel electrode; and a liquid crystal layer between the first and second substrates (page 3, lines 1-5).

In regards to claim 16, Figure 1 of the instant application discloses a pixel electrode 22 of an adjacent pixel region extends over the storage electrode 30.

In regards to claim 17, Figure 2 of the instant application discloses a storage capacitor is formed between the storage electrode 30 and the gate line 2 and wherein the patterned protective layer 18 overlaps a portion of the storage capacitor.

In regards to claim 18, Figure 2 of the instant application discloses a storage capacitor is formed between the storage electrode 30 and the gate line 2 and wherein the patterned protective layer 18 overlaps a lower edge of the storage capacitor.

In regards to claim 19, Figure 1 of the instant application discloses the pixel electrode of the adjacent pixel region is substantially rounded where the pixel electrode of the adjacent pixel region extends over the storage electrode.

Art Unit: 2815

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim et al. disclose a liquid crystal display with a storage electrode overlapping a gate line.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (703) 305-4396.

The examiner can normally be reached from 8:00 AM-4: 30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



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Matthew C. Landau

Examiner

May 4, 2003